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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/005,766	11/02/2001	Antti Ruha	872.0100.U1(US)	7390
29683	7590	11/30/2005	EXAMINER	
HARRINGTON & SMITH, LLP 4 RESEARCH DRIVE SHELTON, CT 06484-6212			TRAN, PABLO N	
			ART UNIT	PAPER NUMBER
			2685	

DATE MAILED: 11/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/005,766

Applicant(s)

RUHA ET AL.

Examiner

Pablo N. Tran

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 September 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-51 is/are pending in the application.
- 4a) Of the above claim(s) 25-38 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 5-14, 17-24, 39, 40 and 43-51 is/are rejected.
- 7) ☒ Claim(s) 3, 4, 15, 16, 41 and 42 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
2. Claims 2, 14, and 40 are recites the limitation "said other IC. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-2, 5-6, 8-9, 12-14, 17, 20, 23-24, 39-40, 43-44, and 46-47 are rejected under 35 U.S.C. 102(b) as being anticipated by Hedberg (5,994,921).

As per claims 1, 5-6, 12-13, 17, and 23-24, 39, and 43-44, Hedberg disclosed a multi-mode Input/Output circuit for transmitting and receiving data between integrated circuits wherein each IC contains at least one of said I/O circuits having at least one of transmitter circuitry (fig. 5/no. 21, fig. 6/no. 21) and receiver circuitry (fig. 5/no. 22, fig. 6/no. 22), the IC are constructed with CMOS-based transistors that are selectively interconnected together by switches to operate as two single-ended, voltage mode

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links, and as a single differential voltage mode link (fig. 5, fig. 6, col. 1/ln. 15-29, col. 5/ln. 42-col. 6/ln. 8).

As per claims 2, 14, and 40, Hedberg disclosed the transmitter sends data to the receiver in another IC over a first pair of adjacently disposed conductors (fig. 5, fig. 6, col. 1/ln. 15-29, col. 5/ln. 42-col. 6/ln. 8).

As per claims 8 and 46, Hedberg disclosed single differential voltage mode with single-ended input drive (fig. 5, fig. 6, col. 1/ln. 15-29, col. 5/ln. 42-col. 6/ln. 8).

As per claims 9, 20, and 47, Hedberg disclosed single differential voltage mode with differential input drive (fig. 5, fig. 6, col. 1/ln. 15-29, col. 5/ln. 42-col. 6/ln. 8).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 7, 10-11, 18-19, 21-22, 45, and 48-49, and 51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hedberg (5,994,921) in view of Pena-Finol et al. (5,832,370).

As per claims 7, 10-11, 18-19, 21-22, 45, and 48-49, Hedberg does not disclose a current mode IC circuitry. However, such is well known in the art, as taught by *Pena-Finol et al.* (fig. 2-5, col. 2/ln. 10-col.4/ln. 45). Therefore, it would have been obvious to one of ordinary skill in the art to provide such teaching of Pena-Finol et al. to the

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communication circuitry of Hedberg to avoid voltage variation and interference data transmission.

As per claim 51, the modified communication circuitry of Hedberg further disclose RF IC and baseband IC (see Pena-Finol et al., fig. 2).

7. Claims 12, 24, and 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hedberg (5,994,921) in view of Bjork et al. (6,009,314).

As per claims 12 and 24, Hedberg does not disclose a transceiver IC. However, such is well known in the art, as taught by Bjork et al. (fig. 1). Therefore, it would have been obvious to one of ordinary skill in the art to provide such circuitry of Bjork et al. to the communication circuitry of Hedberg to reduce the size of the radio equipment, more and more functionality is being incorporated onto a single integrated circuit chip.

Allowable Subject Matter

8. Claims 3-4, 15-16, and 41-42 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

9. Applicant's arguments with respect to claims 1, 13, and 39 have been considered but are moot in view of the new ground(s) of rejection.

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, THIS ACTION IS MADE FINAL. See MPEP §

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706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Conclusion

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Pablo Tran whose telephone number is (571)272-7898. The examiner normal hours are 9:30 -5:00 (Monday-Friday). If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Urban, can be reached at (571)272-7899. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

12. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

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For more information about the PAIR system, see <http://pair-directauspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

November 25, 2005

PABLO N. TRAN
PRIMARY EXAMINER

A handwritten signature in black ink, appearing to be 'P. Tran', with a stylized flourish at the end.

AV26 SP